

REMARKS/ARGUMENTS

Claims 1–14 are pending in the instant application; claims 15–39 are withdrawn from further consideration.

The Examiner has rejected claims 1–14 under 35 U.S.C. § 103(a) as “being unpatentable over Chee et al (WO98/56954 17 December 1998) in view of Fidanza et al (J. Am Chem. Soc. Vol.111 1989 pp. 9117-9119)”.

Specifically, the Examiner states, “Chee et al teach an array with probes which bind to labeled targets both DNA and RNA...”, conceding “Chee et al do not teach phosphorothioate conjugation”. The Examiner continues, “Fidanza et al teach phosphorothioate conjugation with iodoacetamide...”, concluding “one of ordinary skill in the art would have been motivated to apply Fidanza et al’s conjugation to Chee et al’s detection method in order to increase the facility of attaching reporter groups. Fidanza et al states that the phosphorothioate conjugation provides increased facility in attachment and placement of reporter groups which allowed detailed study in structure and function. Moreover, no cleavage occurs at the sight of attachment. It would have been prima facie obvious to apply Fidanza et al’s teaching of phosphorothioate conjugation to various targets...to better study the structure and function of target nucleic acids”.

In response, Applicants respectfully disagree, and respectfully submit that the Examiner has not properly combined the teachings of the two references. Specifically, WO98/56954 discloses and claims methodology for detecting genetic polymorphisms and monitoring of allelic expressions using a probe array. The reference does teach that DNA and RNA hybridization profiles, as well as hybridization intensities can be utilized to characterized specific genotype and/or expression profiles. However, there is no disclosure nor even any suggestion, as the Examiner concedes, of including phosphorothioate conjugation to allow for the attachment of reporter molecules at various stages within the DNA or RNA molecules.

The Fidanza, et al. reference discloses a method of covalently attaching reporter groups at specific sites within DNA sequences, which “would simplify detailed study of the structure and dynamics of unusual DNA forms as well as ligand-DNA or protein-DNA complexes”. This attachment utilizes a chemistry wherein the phosphorothioate diester will covalently bond to an appropriately labeled reporter group. Figure 1 in the cited reference discloses a number of labels which can be attached to the DNA molecule, including a PROXYL spin label, a derivative of dihydropyrroloindole subunits, sulfonamide-linked dansyl fluorophores, and N-linked dansyl fluorophores. IT is noted that these labeled DNA molecules are quite stable and that structural studies of DNA molecules can be determined.

However, there is no disclose, nor even any suggestion that such would be useful in a probe assay of the type disclosed in the '954 PCT publication, nor is there any suggestion that such would be useful with RNA expression studies. Indeed, while the Examiner states that the motivation for combining these references would be "to increase facility of attaching reporter groups", the Fidanza, et al. reference and the '954 patent do not, alone or even in combination with one another, remotely suggest that such attachment chemistry would be useful, or even desirable in expression assay methodology.

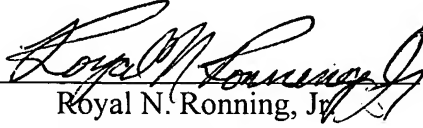
Further, Applicants respectfully assert that the Examiner has, at best, shown that it would be obvious to try to utilize the attachment chemistry disclosed in the Fidanza, et al. article in the methodology of the '954 PCT publication, inasmuch as the references themselves provide no such teaching. While it might be obvious to try, such, Applicants respectfully submit is not the proper basis upon which a rejection under 35 U.S.C. § 103(a) should be made.

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Reply to Office action of January 16, 2004

In view of the foregoing, Applicants respectfully assert the Examiner's rejections cannot be sustained and should be withdrawn. Applicants believe that the claims are in allowable form and earnestly solicit the allowance of claims 1-14.

Respectfully submitted,

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I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450, on April 16, 2004.

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